2-ETHOXYETHANOL

EEO

CAUTIONARY RESPONSE INFORMATION

Common Synonyms			
Cellosolve Dowanol EE Ethylene glycol ethyl ether Ethylene glycol monoethyl ether Glycol monoethyl ether Poly-solv EE	Oily liquid	Colorless	Sweet ether-like odor
	Floats and mixes with water.		

Call fire department.
Avoid contact with liquid.
Notify local health and pollution control agencies.
Protect water intakes.

Fire

Combustible.
Extinguish with dry chemical, alcohol foam, or carbon dioxide.
Cool exposed containers with water.

Exposure

CALL FOR MEDICAL AID.

LIQUID
Irritating to skin and eyes.
Harmful if swallowed.
Remove contaminated clothing and shoes.
Flush affected areas with plenty of water.
IF IN EYES, hold eyelids open and flush with plenty of water.
IF SWALLOWED and victim is CONSCIOUS, have victim drink water or milk.

Water Pollution

Effect of low concentrations on aquatic life is unknown.
May be dangerous if it enters water intakes.
Notify local health and wildlife officials.
Notify operators of nearby water intakes.

1. CORRECTIVE RESPONSE ACTIONS

Stop discharge
Dilute and disperse

2. CHEMICAL DESIGNATIONS

2.1 CG Compatibility Group: 20; Alcohols, glycols
2.2 Formula: $HOCH_2CH_2OCH_2CH_3$
2.3 IMO/UN Designation: 3.3/1171
2.4 DOT ID No.: Not listed.
2.5 CAS Registry No.: 110-80-5
2.6 NAERG Guide No.: Not listed.
2.7 Standard Industrial Trade Classification: 51219

3. HEALTH HAZARDS

3.1 Personal Protective Equipment: Organic gas mask; goggles or face shield; rubber gloves.
3.2 Symptoms Following Exposure: Some eye irritation. Inhalation of vapors causes irritation of nose.
3.3 Treatment of Exposure: Flush eyes with water for 15 min. Flush skin with large volumes of water. Call a physician.
3.4 TLV-TWA: 5 ppm.
3.5 TLV-STEL: Not listed.
3.6 TLV-Ceiling: Not listed.
3.7 Toxicity by Ingestion: Grade 2; LD_{50} = 3.1 g/kg (rabbit)
3.8 Toxicity by Inhalation: Currently not available.
3.9 Chronic Toxicity: Excessive exposure may cause liver and kidney damage. Animal studies have produced malformed offspring and morphological changes in the testes.
3.10 Vapor (Gas) Irritant Characteristics: Vapors cause a slight smarting of the eyes or respiratory system if present in high concentrations. The effect is temporary.
3.11 Liquid or Solid Characteristics: Minimum hazard. If spilled on clothing and allowed to remain, may cause smarting and reddening of the skin.
3.12 Odor Threshold: Currently not available
3.13 IDLH Value: 500 ppm
3.14 OSHA PEL-TWA: 200 ppm
3.15 OSHA PEL-STEL: Not listed.
3.16 OSHA PEL-Ceiling: Not listed.
3.17 EPA AEGL: Not listed

4. FIRE HAZARDS

4.1 Flash Point: 120°F C.C.
4.2 Flammable Limits in Air: LEL: 1.7%; UEL: 15.7%
4.3 Fire Extinguishing Agents: Alcohol foam, carbon dioxide or dry chemical
4.4 Fire Extinguishing Agents Not to Be Used: Water.
4.5 Special Hazards of Combustion Products: Toxic gases, such as carbon monoxide, may be produced in fire.
4.6 Behavior in Fire: Currently not available
4.7 Auto Ignition Temperature: 455°F
4.8 Electrical Hazards: Not listed.
4.9 Burning Rate: 2.4 mm/min
4.10 Adiabatic Flame Temperature: Currently not available
4.11 Stoichometric Air to Fuel Ratio: 26.2 (calc.)
4.12 Flame Temperature: Currently not available
4.13 Combustion Molar Ratio (Reactant to Product): 9.0 (calc.)
4.14 Minimum Oxygen Concentration for Combustion (MOCC): Not listed

5. CHEMICAL REACTIVITY

5.1 Reactivity with Water: No reaction.
5.2 Reactivity with Common Materials: Incompatible with strong oxidizers and alkalies, strong acids, copper.
5.3 Stability During Transport: Stable.
5.4 Neutralizing Agents for Acids and Caustics: Not pertinent.
5.5 Polymerization: Will not polymerize.
5.6 Inhibitor of Polymerization: Not pertinent.

6. WATER POLLUTION

6.1 Aquatic Toxicity: Currently not available
6.2 Waterfowl Toxicity: Currently not available
6.3 Biological Oxygen Demand (BOD): 1.58 lb/lb, 5 days; 54% (theor.), 5 days
6.4 Food Chain Concentration Potential: None.
6.5 GESAMP Hazard Profile:
Bioaccumulation: 0
Damage to living resources: 0
Human Oral hazard: 1
Human Contact hazard: II
Reduction of amenities: XXX

7. SHIPPING INFORMATION

7.1 Grades of Purity: Commercial.
7.2 Storage Temperature: Ambient.
7.3 Inert Atmosphere: No requirement.
7.4 Venting: Not listed.
7.5 IMO Pollution Category: D
7.6 Ship Type: 3
7.7 Barge Hull Type: 3

8. HAZARD CLASSIFICATIONS

8.1 49 CFR Category: Not listed.
8.2 49 CFR Class: Not pertinent.
8.3 49 CFR Package Group: Not listed.
8.4 Marine Pollutant: No
8.5 NFPA Hazard Classification:

Category	Classification
Health Hazard (Blue).....	2
Flammability (Red).....	2
Instability (Yellow).....	0

8.6 EPA Reportable Quantity: Not listed.
8.7 EPA Pollution Category: Not listed.
8.8 RCRA Waste Number: Not listed
8.9 EPA FWPCA List: Not listed

9. PHYSICAL & CHEMICAL PROPERTIES

9.1 Physical State at 15° C and 1 atm: Liquid
9.2 Molecular Weight: 90.12
9.3 Boiling Point at 1 atm: 275.2°F = 135.1°C = 408.3°K
9.4 Freezing Point: –93.0°F = –69.4°C = 203.3°K
9.5 Critical Temperature: Currently not available
9.6 Critical Pressure: Currently not available
9.7 Specific Gravity: 0.931 at 20°C (liquid)
9.8 Liquid Surface Tension: Currently not available
9.9 Liquid Water Interfacial Tension: Currently not available
9.10 Vapor (Gas) Specific Gravity: 3.0 (at boiling point)
9.11 Ratio of Specific Heats of Vapor (Gas): 1.064
9.12 Latent Heat of Vaporization: 191 Btu/lb = 106 cal/g = 4.44 X 10^5 J/kg
9.13 Heat of Combustion: (est.) –13,000 Btu/lb = –7,400 cal/g = –310 X 10^5 J/kg
9.14 Heat of Decomposition: Currently not available
9.15 Heat of Solution: (est.) –9 Btu/lb = –5 cal/g = –0.2 X 10^5 J/kg
9.16 Heat of Polymerization: Not pertinent.
9.17 Heat of Fusion: Currently not available
9.18 Limiting Value: Currently not available
9.19 Reid Vapor Pressure: 0.1 psia.

NOTES

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9.20 SATURATED LIQUID DENSITY		9.21 LIQUID HEAT CAPACITY		9.22 LIQUID THERMAL CONDUCTIVITY		9.23 LIQUID VISCOSITY	
Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F	Temperature (degrees F)	British thermal unit inch per hour-square foot-F	Temperature (degrees F)	Centipoise
68	7.770		CURRENTLY NOT AVAILABLE		CURRENTLY NOT AVAILABLE		CURRENTLY NOT AVAILABLE

9.24 SOLUBILITY IN WATER		9.25 SATURATED VAPOR PRESSURE		9.26 SATURATED VAPOR DENSITY		9.27 IDEAL GAS HEAT CAPACITY	
Temperature (degrees F)	Pounds per 100 pounds of water	Temperature (degrees F)	Pounds per square inch	Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F
	MISCIBLE	68	0.073	68	0.00117		CURRENTLY NOT AVAILABLE